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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,985	04/25/2001	Hong-Ming Chien	LIU 164	5346

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Washington, DC 20005

EXAMINER


RYMAN, DANIEL J

ART UNIT	PAPER NUMBER
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2665

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/840,985	Applicant(s) CHIEN ET AL. 	
	Examiner Daniel J. Ryman	Art Unit 2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 1-6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The abstract of the disclosure is objected to because it exceeds 150 words in length.

Correction is required. See MPEP § 608.01(b).

Claim Objections

2. Claims 1-6 are objected to due to grammatical mistakes present in the claims. The claims should be edited to correct these mistakes.

3. Claim 3 objected to because it comprises two separate sentences where a claim should only be a single sentence. See MPEP § 608.01(m). Appropriate correction is required.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willke, II et al. (USPN 6,708,240) in view of Born (USPN 6,115,771) in further view of Goodfellow (USPN 6,446,148).

6. Regarding claim 1, Willke discloses a structure for using PCI protocol for time-division multiplexing of a single PCI bus with multiple concurrent hard disks, which includes: A primary PCI bus arbiter (col. 1, lines 17-20): it combines the bus requests of PCI bus masters to complete time-division multiplexing on the host side (col. 1, lines 17-20), and PCI bridge (ref. 30), herein it is used to respond to the on-line requests of the bus masters by switching the time-division

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multiplexing on the target side (col. 1, lines 14-20), thereof at the same time, in order to resolve the possible bus contention that may be generated when two or more PCI drives are acting simultaneously under such time-division multiplexing condition, the PCI bridge shall decide the connection on/off through bridge time line, said the connection on/off between the target drive and the main PCI bus can be controlled (col. 1, lines 14-20), and several concurrent PCI master drives (col. 1, lines 8-13): under such bridge structure, all PCI drives are defaulted as concurrent PCI master drives so that they are independent to each other and can carry out respective commands and await requests from the main system individually (col. 1, lines 54-58), wherein by means of the foregoing structure, a bridge PCI bus system is constructed to overlap the seek time and data transfer time, improve the storage system's performance and reduce the cable quantity (col. 1, lines 17-20) where "improve the storage system's performance and reduce the cable quantity" is an intended use rather than a functional limitation.

Willke does not expressly disclose that the PCI bus is an ATA Side-Band protocol bus. However, Willke does disclose that the PCI bus is used to interconnect peripheral devices, such as drives (col. 1, lines 8-13). Born teaches, in a bus system, that ATA is a well-known bus protocol for interconnecting peripheral devices, such as drives (col. 1, lines 14-35). Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to use ATA as the bus protocol since ATA is a well-known bus protocol.

Willke in view of Born does not expressly disclose that there are multiple bridges. However, Willke in view of Born does disclose that a bridge is used to regulate transactions between busses and devices (Willke: col. 1, line 62-col. 2, line 11). Goodfellow teaches, in a bus system, that bridges also act to convert protocols between busses and devices (col. 1, lines 53-

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56). Goodfellow also discloses that it is important for ATA busses to work with legacy devices (col. 1, lines 53-56 and col. 3, lines 21-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to use a bridges for each master ATA device in order to regulate the transaction between the device and the bus, such that the bus is compatible with legacy ATA devices.

7. Regarding claim 2, referring to claim 1, Willke in view of Born in further view of Goodfellow suggests that the bridge uses a non-ATA defined standard signal time line to monitor the bus system (Willke: col. 1, line 62-col. 2, line 11 and Goodfellow: col. 1, lines 53-56 and col. 3, lines 21-22).

8. Regarding claim 3, Willke discloses an invention which includes: a. host proposes PCI bus request (col. 1, lines 8-13 and col. 1, lines 54-58), and b. determine whether PCI bus has allowed the request (col. 1, lines 17-20 and col. 1, line 65-col. 2, line 11). If not, host shall continue propose PCI bus request (col. 1, lines 17-20 and col. 1, line 65-col. 2, line 11) where this step is implicit, and c. host sends master selection signals out (col. 1, line 65-col. 2, line 11) where the host will indicate which device it wants to select for communication, and d. host carries out master selection protocol (col. 1, line 65-col. 2, line 11) where the host will determine which peripheral device it wants to select.

Willke does not expressly disclose that the PCI bus is an ATA Side-Band protocol bus. However, Willke does disclose that the PCI bus is used to interconnect peripheral devices, such as drives (col. 1, lines 8-13). Born teaches, in a bus system, that ATA is a well-known bus protocol for interconnecting peripheral devices, such as drives (col. 1, lines 14-35). Thus, it

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would have been obvious to one of ordinary skill in the art at the time of the invention to use ATA as the bus protocol since ATA is a well-known bus protocol.

Willke in view of Born does not expressly disclose that the master devices communicate through bridges. However, Willke in view of Born does disclose that a bridge is used to regulate transactions between busses and devices (Willke: col. 1, line 62-col. 2, line 11). Goodfellow teaches, in a bus system, that bridges also act to convert protocols between busses and devices (col. 1, lines 53-56). Goodfellow also discloses that it is important for ATA busses to work with legacy devices (col. 1, lines 53-56 and col. 3, lines 21-22). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have the master devices communicate through the use of bridges in order to regulate the transaction between the device and the bus such that the bus is compatible with legacy ATA devices.

9. Regarding claim 4, referring to claim 3, Willke in view of Born in further view of Goodfellow suggests a read/setup procedure of an external control register generated during software reset, procedure of an external control register generated during software reset thereof such procedure shall be able to be identified by a specific external mechanism cooperating with the bridge to enter an external access condition for the read/write setup of the specific control register (Goodfellow: col. 1, lines 17-19; col. 1, lines 29-35; and col. 1, lines 57-61).

10. Regarding claim 5, referring to claim 4, Willke in view of Born in further view of Goodfellow suggests that the external mechanism is a signal of power or LED switch or a message of the external connection box's temperature or the fan's operation (Willke: col. 1, lines 8-13 and Born: col. 1, lines 14-35) where the peripheral is a device in a computer where computers contain a signal or power, LED switch, and a fan operation.

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11. Regarding claim 6, referring to claim 4, Willke in view of Born in further view of Goodfellow suggests that the bridge can break away from the external access condition and return to its original condition by an escape procedure when external mechanism is in an external access condition (Willke: col. 2, lines 37-62).

Conclusion

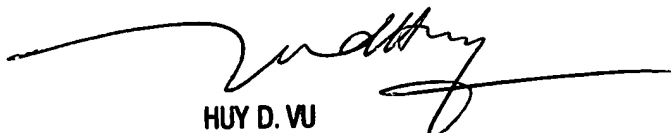
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J. Ryman whose telephone number is (571)272-3152. The examiner can normally be reached on Mon.-Fri. 7:00-4:30 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571)272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DR

Daniel J. Ryman
Examiner
Art Unit 2665


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